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EXAMINER

LAM, ANN Y

ART UNIT PAPER NUMBER

1641

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/092,285

Applicant(s)

HINCHCLIFFE, JOHN

Examiner

Ann Y. Lam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33, 69 and 70 is/are pending in the application.
- 4a) Of the above claim(s) 34-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-33, 69 and 70 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 5 is objected to because of the following informalities: line 1 should recite –further—before “comprising” (or otherwise corrected.) Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Lipton, 5,770,441.

Lipton discloses a microarray cartridge comprising :

a body (10 and 20) having a wall forming a cavity (3) surrounded by a mating surface (9), the body comprising a reaction chamber (8) and at least one microarray support (23, or bottom of 10, see fig. 3) contained within the cavity, said at least one microarray support being dimensioned to support a microarray slide within the cavity such that a surface of the slide covers the reaction chamber; and

a cover (6) configured to cover the cavity on a same side of the reaction chamber as the microarray slide when the microarray slide is with in the cavity, and to sealingly

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adhere with the mating surface of said body by non-removable adhering means (col. 14, line 53-54). (The Office notes that a microarray slide is not positively recited as a structural element in the claims.)

As to claim 2, the non-removable adhering means comprises a heat seal between said cover and the mating surface of said body (col. 14, lines 53-54).

As to claim 3, the non-removable adhering means comprises a non-removable adhesive seal between said cover and the mating surface of said body (col. 13, lines 58-61).

As to claim 4, the non-removable adhering means does not include a mechanical fastener (col. 14, lines 53-54).

2. Claims 1, 5-7 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Gabridge, 4,435,508.

Gabridge discloses a microarray cartridge comprising :

a body (1) having a wall forming a cavity (2) surrounded by a mating surface (upper surface of 1), the body comprising a reaction chamber (2) and at least one microarray support (9) contained within the cavity, said at least one microarray support being dimensioned to support a microarray slide within the cavity such that a surface of the slide covers the reaction chamber (see fig. 1); and

a cover (4) configured to cover the cavity on a same side of the reaction chamber as the microarray slide when the microarray slide is within the cavity and to sealingly adhere with the mating surface of said body by non-removable adhering means. The

Office notes that a microarray slide is not positively recited as a structural element in the claims.

As to claim 5, the cartridge further comprises a plurality of microarray supports (see the elements around the chamber 2, forming part of upper plate 1, in fig. 1) within the cavity for positioning the microarray slide.

As to claim 6, Gabridge discloses an alternative cover in figure 3. The cover for claim 6 is (17), and a first access site communicating with the reaction chamber for passing fluids from a delivery device and into the reaction chamber is disclosed at (22).

As to claim 7, the first access site (22) is located on said body, wherein the access site is dimensioned to pass fluids from a fluid delivery device through the body wall and into the reaction chamber (see fig. 3).

As to claim 30, a snap feature (3) to hold said cover over said cavity before sealingly adhering said cover to said mating surface is disclosed.

3. Claims 1, 5, 6, 8-11, 13-16, 23, 24, 28, 29 and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Angros, 6,534,008.

Angros discloses a microarray cartridge comprising :

a body (22) having a wall forming a cavity (14) surrounded by a mating surface (24), the body comprising a reaction chamber (14) and at least one microarray support (42) contained within the cavity, said at least one microarray support being dimensioned to support a microarray slide (44) within the cavity such that a surface of the slide covers the reaction chamber; and

a cover (26) configured to cover the cavity on a same side of the reaction chamber as the microarray slide when the microarray slide is within the cavity and to sealingly adhere with the mating surface (24) of said body by non-removable adhering means.

As to claim 5, the cartridge further comprises a plurality of microarray supports (see the sides forming 24 in fig. 2) within the cavity for positioning the microarray slide.

As to claim 6, the cartridge further comprises a first access site (34 or alternatively 18) communicating with the reaction chamber for passing fluids from a delivery device and into the reaction chamber.

As to claim 8, the body further comprises a first dimple feature (bottom part of 22) in communication with the reaction chamber and the first access site, the first dimple feature forming a passage for a fluid around a first edge of the microarray slide and into the reaction chamber when the microarray slide is placed in the cavity.

As to claim 9, the first access site (18) is located on said body and communicates with said dimple feature, such that fluid from the fluid delivery device passes through the body wall (upper part of 22) and into the dimple feature (lower part of 22).

As to claim 10, the first access site (34) is located on said cover and communicates with said dimple feature (bottom part of 22), such that fluid from the fluid delivery device passes through the cover and into the dimple feature.

As to claim 11, the first access site (34) is an open port and the fluid delivery device is a pipette dimensioned to deliver fluids through the port. (Examiner notes that

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the pipette is not positively claimed as part of the claimed cartridge. The first access site (34) is capable of receiving fluid from a pipette and thus meets the limitation.)

As to claim 13, a second (52a) dimple feature in communication with the reaction chamber (14), the second dimple feature forming a passage for fluids around a second edge of the microarray slide and into the reaction chamber when the microarray slide is placed in the cavity (see col. 7, lines 11-12).

As to claim 14, said cartridge further includes a second access site (52) communicating with the second dimple feature for passing fluids into or out of the reaction chamber (see col. 7, lines 11-12).

As to claim 15, the first access site (18) is an open end of the cartridge, said cartridge further comprising a flange feature (16) at the open end to facilitate entry of a fluid delivery device through the first access site before sealingly cohering said cover to said body at the open end.

As to claim 16, the flange feature comprises a first flange (i.e., inner surface and portion of 16) attached to and extending from an edge of said body at the access site and a second flange (i.e., outer surface and portion of 16) attached to and extending from a corresponding edge of said cover, such that the first and second flanges facilitate passage of the fluid delivery device through the open end of the cartridge between the body and the cover.

As to claim 23, the body includes a plurality of cavities (14, see fig. 2), each of the plurality of cavities having a corresponding reaction chamber and at least one corresponding microarray support for supporting a microarray slide (see fig. 2).

As to claim 24, the plurality of cavities comprises at least four cavities (see fig. 2).

As to claim 28, the body further includes a plurality of obstacles (51 and 54) within the reaction chamber arranged to affect motion of fluid within the chamber.

As to claim 29, the obstacles (51 and 54) are attached to a surface of the reaction chamber opposite the microarray.

As to claim 31, a microarray slide (44) positioned within the cavity of said body and supported by the microarray support such that a surface of said microarray slide covers the reaction chamber is disclosed (see fig. 3A).

As to claims 32 and 33, the body is capable of supporting a microarray slide comprising an array of nucleic acid probes. (Examiner notes that Applicant has not positively claimed the microarray slide as part of the claimed cartridge.)

4. Claims 1, 69 and 70 are rejected under 35 U.S.C. 102(b) as being anticipated by Dudek, 5,543,114.

Dudek discloses a microarray cartridge comprising :

a body (20) having a wall forming a cavity (see figure 1) surrounded by a mating surface (i.e., the perimeter of 20), the body comprising a reaction chamber (see figure 1) and at least one microarray support (17) contained within the cavity, said at least one microarray support being dimensioned to support a microarray slide within the cavity such that a surface of the slide covers the reaction chamber; and

a cover (2) configured to cover the cavity on a same side of the reaction chamber as the microarray slide when the microarray slide is with in the cavity, and to sealingly

adhere with the mating surface of said body by non-removable adhering means (col. 3, lines 4-5). (The Office notes that a microarray slide is not positively recited as a structural element in the claims.)

As to claim 69, the cover (2) contiguously extends from an edge of the mating surface and is configured to hingably cover the cavity and sealingly adhere with the mating surface of said body (col. 3, line 1).

As to claim 70, a snap feature (6 and 7) on the mating surface of said body to engage and hold said cover over the cavity before sealingly adhering said cover to the mating surface is disclosed (col. 3, lines 4-5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12, 17-22 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angros, 6,534,008.

Angros discloses the invention substantially as claimed (see above), except for the thickness of the first access site being between 0.003 and 0.015 inches (claim 12), the thickness of the body wall being less than 0.065 inches (claim 17), or between 0.005 and 0.025 inches (claim 18), or between .010 and .015 inch (claim 19), or less than 0.1

inch (claim 20), or between 0.032 and 0.075 inch (claim 21), or between 0.040 and 0.060 inches (claim 22), nor the reaction chamber having a volume of at least 500 uL (claim 25), or at least 1 mL (claim 26), or 1 mL to 3 mL (claim 27).

Angros does not specifically teach the dimensions of the device. However, the device is directed to an apparatus for treating biological samples on microscope slides (44), (and see col. 3, lines 57-59.)

It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. In this case, Angros discloses the general conditions of the claims and the dimensions of the body wall and the reaction chamber as claimed by Applicant are optimum or workable ranges and thus its discovery involves only routine skill in the art under *In re Aller*.

Response to Arguments

Applicant's arguments filed November 1, 2005 have been fully considered but they are not persuasive with respect to the rejections that have been maintained.

The arguments with respect to Bjornson is moot because the rejections under Bjornson have been withdrawn.

Applicant also argues on page 11 that Gabridge does not disclose a body comprising supports for holding a microarray slide that covers the reaction chamber. Applicant argues that the substrate is secured between upper and lower plates such that the substrate forms the bottom of the vessel and does not cover any reaction

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chamber. This argument is moot because element (9) is now considered the microarray support. Moreover, the Office notes that a microarray slide is not positively recited as a structural element in the claims, nor does the claim recite structural elements to fit the slide in a particular area in the cavity. Parts of element (1) is capable of supporting a microarray slide as recited by Applicant.

Applicant also argues that Angros does not teach that the cover is on the opposite side of the reaction compartment from the microscope slide as currently amended. The Office notes that Applicant has not indicated which side (i.e., the upper side, or left side, etc.) Thus, the Angros cover is considered to be on the same side of the reaction compartment as the microscope slide, i.e., the left side for example.)

The arguments with respect to the Chow reference is moot because the rejection under Chow has been withdrawn.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ann Y. Lam whose telephone number is 571-272-0822. The examiner can normally be reached on M-Sat 11-6:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A.L.



LONG V. LE
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1/23/06